happen somewhere between 1950 and 1956. What it will be Professor Huntington does not venture to surmise, but he reminds us that in the years preceding 1388, when Alpha Centauri was active, Europe was a very uncomfortable place to live in. There were droughts and floods, famines and freezings. The Baltic was frozen so that horse sleighs could cross from Germany to Sweden, and the Danube and the Rhine sometimes inundated the cities on their banks and sometimes nearly dried up.

There are more serious grounds for suspecting Alpha Centauri of a malign influence on the earth for that star was nearest to the earth 28,000 years ago, being then only 3.2 light-years away. Now this is the date that geologists have set for the end of the last Great Ice Age so the approach and proximity of Alpha Centauri may have had something to do with that spell of cold weather which came near freezing out the human race. The world is even yet convalescing from the chills of the Glacial Epoch. Greenland which once was really green with ferns and figs is still covered by an ice cap.

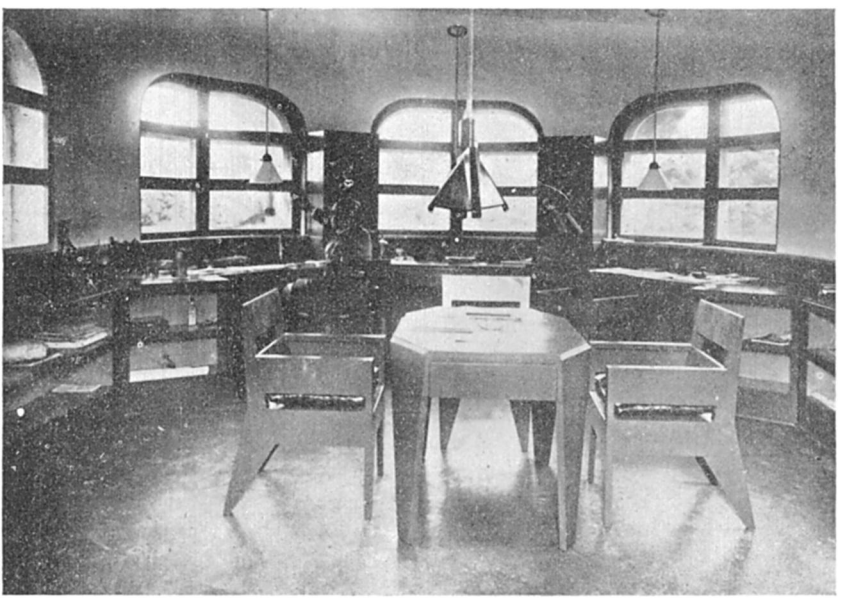
We need not fear another glacial age from the same cause for Alpha Centauri is now 4.3 light-years away and leaving us at the rate of thirteen miles a second. But Sirius is due in this vicinity in 65,000 years and that would be quite as—I should say, might be equally—bad for us.

But Professor Huntington endeavors to console us by reminding us that the human race not only survived several such periods of climatic stress, but has come out of them in each case stronger and better for the struggle for existence. He is a firm believer in the value of stormy weather. He is a New Englander.

NEW LIGHT ON THE ORIGIN OF LIFE

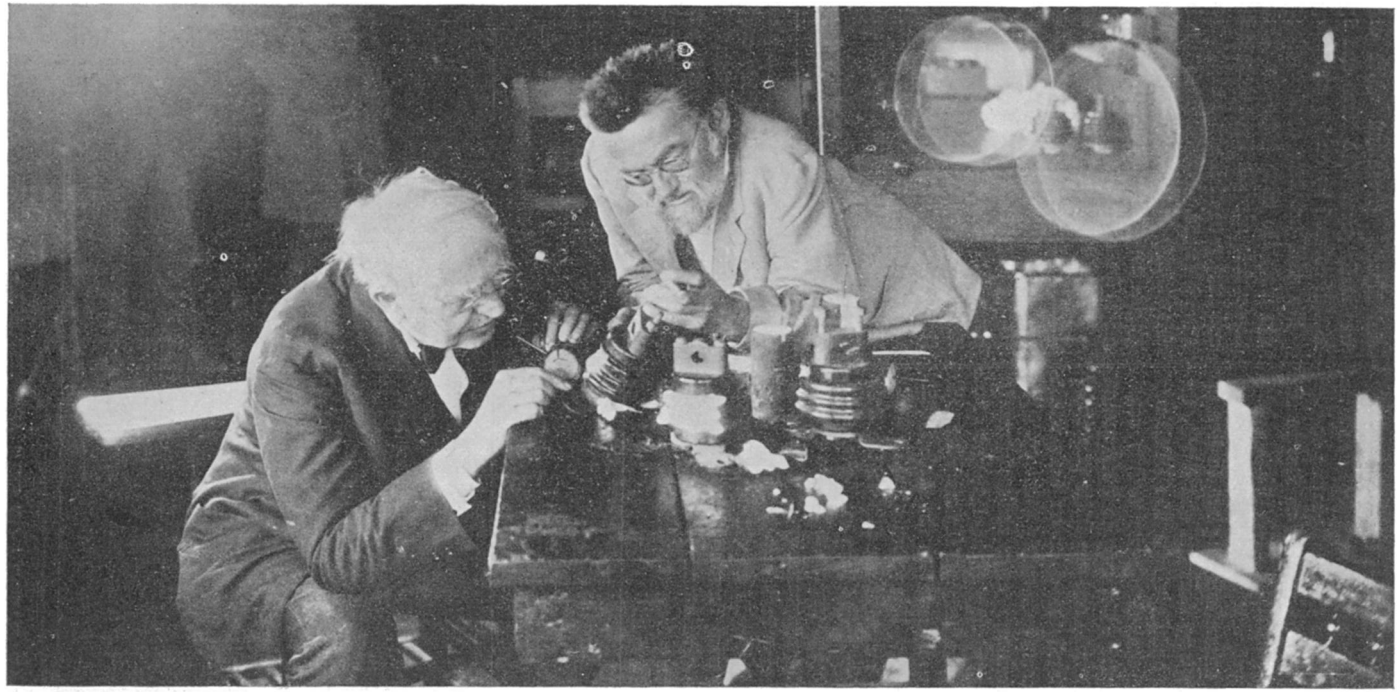
Was the first living being a plant or animal? How could either originate out of non-existing matter?

These are questions that have hitherto baffled scientists. They could



Wide World Photos

A LABORATORY OF THE ASTROPHYSICAL OBSERVATORY BUILT FOR PROFESSOR EINSTEIN



Wide World Photos

MR. THOMAS A. EDISON AND DR. CHARLES P. STEINMETZ
In the Research Laboratories of the General Electric Company at Schenectady

trace back, more or less satisfactorily, the lines of development of plants and animals to the simplest and most primitive forms of life, but there they ran up against an insurmountable wall, on the near side of which was the world of living organisms and on the far side the world of inert mineral and inorganic matter.

We all know that non-living matter can be converted over into living matter for we do that ourselves whenever we eat or breathe. We all know that green plants have the power of building up sugar and starch and wood (the so-called carbohydrates) out of the water of the soil and carbon dioxide of the air, for we can see them do it any sunny day. But it is life only that can bring into the living organism this inorganic material. Water and carbon dioxide, plain "soda water," do not spontaneously change over into sugar or start to grow into a plant. It requires green colored granules of the leaves, called chlorophyll, to effect this transformation.

But chlorophyll is a very complicated chemical compound. It is formed only by green plants as they develop in the sun's rays from white sprouts. So the plant must exist before chlorophyll is formed. But, on the other hand, a plant could not exist unless it got its energy from the sugar and other stuff stored up previously by some chlorophyll-bearing plant. Even the simplest green plant can not live and grow on its nutritive salts in the sunshine unless it has a bit of plant-stuff to feed on as a starter.

We might surmise as a way out of the dilemma that animal life came first on the earth, and, in decaying, supplied the primitive plants with the necessary organic food stuff. But here we are blocked because animals are parasites of plants. They live on the sugars and so forth that the green leaves have stored up by means of sunshine.

So this was the perplexing situation. Plants can feed on animals or other plants. Animals can feed on plants or other animals. But where could the first animals or plants get their food when there was nothing but mineral matter in the world? It was worse than the old question, which came first, the hen or the egg?

But of late we are beginning to get light on the problem. The wall between the living and non-living is crumbling. Certain sugars and proteins, such as the plant forms that we eat, can now be made in the laboratory out of inorganic material. Artificial cells have been constructed that grow and crawl and feed themselves and stick out feelers and subdivide very much like living cells. It has been found that ultra-violet rays, that is, light of such short waves that it can not be seen, can convert water and carbon dioxide into sugar as chlorophyll does.

These short waves are not contained in the sunshine that reaches the earth to-day, but it is found that ordinary rays may act the same way in the presence of certain substances such as iron rust in water. These same energetic rays are able to incorporate the nitrogen of mineral salts into compounds like the protein of the living cell. So here we see the possibility that the action of the sunlight on the sea in primordial periods —or even in the present—might produce sufficient food to give a single cell a start in life and enable it to grow and multiply and develop into other and higher forms.

But how this primal cell got to going in this way the biologists are only beginning to surmise. Dr. E. J. Allen, at the recent Hull meeting of the British Association for the Advancement of Science, ventures the theory that the first organism was of the animal sort and spherical shape, but that it gradually grew a tail or whip that enabled it to rise to the sunny surface of the sea whenever it

sank below and that it there acquired the chlorophyll by which it could make its own food out of the air and water. This is far from knowing what did happen in those early days, but it is a great advance to be able even to speculate as to how it might have happened since not many years ago it seemed that it could not happen at all.

SCIENTIFIC ITEMS

WE record with regret the death of Robert Wheeler Willson, emeritus professor of astronomy at Harvard University; of Guy Henry Cox, formerly professor of geology at the Missouri School of Mines; of Dr. Chauncey William Waggoner, head of the department of physics in West Virginia University; of F. T. Trouton, emeritus professor of physics in the University of London, and of E. Bergmann, director of the Chemisch-Technische Reichsanstalt, Berlin.

THE Henry Jacob Bigelow medal of the Boston Surgical Society was presented to Dr. William W. Keen, of Philadelphia "for conspicuous contributions to the advancement of surgery," on the evening of October 25, when Dr. Keen addressed the society on "Sixty years of surgery, 1862-1922."

ON the occasion of the celebration of the fiftieth anniversary of the Dutch Zoological Society there were admitted as honorary members: Professor O. Abel, Vienna; Professor M. Caullery, Paris; Professor L. Dollo, Brussels; Professor B. Grassi, Rome; Professor V. Häcker, Halle; Professor S. J. Hickson, Manchester; Professor N. Holmgren, Stockholm; Professor T. H. Morgan, New York; Dr. F. Sarasin, Basle, and Dr. J. Schmidt, Copenhagen.

FOSTER HALL, the chemical laboratory of the University of Buffalo, designed especially to meet the needs of the electro-chemical, hydro-electric, dye and steel industries on the Niagara frontier, was dedicated on October 27 in connection with the installation of Dr. Samuel P. Capen, of Washington, as chancellor of the university. Dr. Edgar F. Smith, president of the American Chemical Society, and Dr. Edwin E. Slosson, of Science Service, were speakers at the ceremony. The laboratory, erected at a cost of a million dollars, is the gift of O. E. Foster, of Buffalo.

IN the will of Prince Albert of Monaco, who died on June 26 last, there are several gifts for scientific purposes. His farm at Sainte Suzanne is left to the French Academy of Agriculture, and the wish is expressed that the estate should remain a place for agricultural experiments, to demonstrate what science can obtain from sterile lands. Dr. Jules Richard will receive 600,000 francs to enable him to complete literary and scientific works in progress, including the results of the oceanographic cruises and the preparation of the Bathymetric Chart of the Oceans. The proceeds of the sale of the yacht *Hirondelle,* all books and publications of a scientific nature, as well as certain personal effects, will go to the Oceanographic Institutes at Paris and Monaco, while the Institute of Human Paleontology in Paris is to receive any personal effects relating to the work carried on there. The Paris Academy of Sciences will receive a million francs, the income of which is to provide a prize to be awarded every two years, the nature of the prize to be indicated by the academy, according to the needs of the moment; a like sum is bequeathed to the Academy of Medicine for a similar prize.